



**North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs**

July 2017

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1 North Slope Facilities Management Executive Summary and Major Issues

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

- * Mark Ivey- ARM Alaska Sites Manager (SNL)
- * Fred Helsel- AMF3 Site Manager (SNL)
- * Dan Lucero- Barrow Site Manager (SNL)
- * Darielle Dexheimer- Tethered Balloon Operations (SNL)
- * Valerie Sparks- ARM Project Office (SNL)
- * Martin Stuefer- Rapid Response Team (UAF)
- * Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2017 Financials (as of July 28, 2017)

	July	YTD
Carryover funds	\$3,729,525	
Funds Allocated YTD	\$6,232,000	
Carryover plus YTD funds	\$9,961,525	
Cost, burdened amount	\$5,520,132	
Uncosted Funds	\$4,441,394	
Commits, burdened total	\$2,080,643	
Current fiscal year uncommitted funds	\$2,360,751	
Subsequent fiscal year (SFY)commits	\$571,020	
Total uncommitted funds, including SFY commits	\$1,789,730	
Fully Burdened Staff Costs	\$89,000	
Fully Burdened Contract Costs	\$257,000	
Fully Burdened Total Costs	\$346,000	\$5,520,000

3 Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

4 Instrument Status – Provided by Martin Stuefer

AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR July 21 - July 28, 2017

BRIEF STATUS OF INSTRUMENTS and site IN OLIK TOK AS OF 2017/07/28:

Facilities	Operational
Data Systems	Operational
Vehicles	Operational
Desktop Computers	Operational
SKYRAD - SKY Radiometer on Stand for downwelling	Operational
MFRSR - Multifilter Rotating Shadowband Radiometer	Operational
GNDRAD - Ground Radiometer on Stand for Upwelling	Operational
MFR3m - Multifilter Radiometer at 3m height	Operational
MAWS - Automatic Weather Station	Partly Operational
MET - Surface & Tower Meteorological Instruments	Operational
CMH - Chilled Mirror Hygrometer	Operational
AMC - Soil, up/downwelling radiation measurements	Operational
ECOR - Eddy Correlation Flux System	Operational
MWR3C - Three Channel Microwave Radiometer	Operational
MPL - Micropulse Lidar	Operational
DL - Doppler Lidar	Operational
RL - Raman Lidar	Not Operational
CEIL - Vaisala Ceilometer	Operational
RWP - Radar Wind Profiler	Operational
KAZR - Ka ARM Zenith Radar	Operational as per warno.arm.gov
KaWSACR - Ka-Band Scanning ARM Cloud Radar	Operational as per warno.arm.gov
BBSS - Balloon Borne Sounding System	Operational

TSI - Total Sky Imager	Operational
AOS - Aerosol Observing System	Partly Operational
AOSMET - AOS Meteorological Measurements	Operational
CO - AOS Carbon Monoxide Analyzer	Partly Operational
CPC - Condensation Particle Counter	Operational
CAPS - Cavity Attenuated Phase Shift Extinction Monitor	Operational
ACSM - Aerosol Chemical Speciation Monitor	Not Operational
HTDMA - Humidified Tandem Differential Mobility Analyzer	Operational
GHG - PICARRO	Operational
NEPH - Nephelometer	Operational
PSAP - Particle Soot Absorption Photometer	Operational
UHSAS - Ultra-High Sensitivity Aerosol Spectrometer	Operational
IMPACTOR - AOS Impactor	Operational
OZONE - AOS Ozone	Operational
TRACEGAS - AOS CO, N2O, H2O	Operational
CCN - Cloud Condensation Nuclei Particle Counter	Operational
MASC - Multi Angle Snowflake Camera	Operational
PIP - Precipitation Imaging Package	Operational
LPM - Laser Precipitation Monitor	Operational
GEONOR - Geonor Weighing Gauge	Operational
SRS - Snow Depth Sensor	Operational
AERI - Atmospheric Emitted Radiance Interferometer	Operational
CIMEL - Cimel Sunphotometer	Operational
MET-AIR - DataHawk Unmanned Aerial System	Operational
TBS - Tethered Balloon System	Operational

* Oliktok Instruments in Detail: *

INFRASTRUCTURE --- Facilities --- Operational.

2017/07/24, CM-2017-AMF3-VSN-2041: The site's power needed to be switched from the east 50 kw generator over to the west 100 kw generator due to a failing alternator in the east gen-set. Site ops powered down the instruments that were not connected to a UPS, and switched power to the west 100 kw generator. Site ops proceeded to repower the instruments that had been powered down.

INFRASTRUCTURE --- Data Systems --- Operational.

2017/07/28, CM-2017-AMF3-VSN-2043: HDD S/N NA7Q2BYJ was full; it was replaced with HDD S/N: NA75FCZL. The old disk will be shipped via USPS tracking # USPS 9114 9014 9645 0952 9752 97.

2017/07/25, CM-2017-AMF3-VSN-2042: HDD S/N NA77YQCG was full; it was replaced with HDD S/N: NA7Q2BYJ. The old disk will be shipped via USPS tracking # USPS 9114 9014 9645 0952 9752 97.

2017/07/24, CM-2017-AMF3-VSN-2040: HDD S/N NA75FERN was full; it was replaced with HDD S/N: NA77YQCG. The old disk will be shipped via USPS tracking # USPS 9114 9014 9645 0952 9753 03.

2017/07/22, CM-2017-AMF3-VSN-2039: HDD S/N NA76MA83 was full; it was replaced with HDD S/N: NA75FERN. The old disk will be shipped.

INFRASTRUCTURE --- Vehicles --- Operational.

INFRASTRUCTURE --- Desktop Computers --- Operational.

SKYRAD --- SKYRAD general --- Operational.

SKYRAD --- IRT --- Operational.

SKYRAD --- PIR 1 shaded --- Operational.

SKYRAD --- PIR 2 shaded --- Operational.

SKYRAD --- SOLAR Tracker --- Operational.

SKYRAD --- B&W diffuse --- Operational.

SKYRAD --- NIP --- Operational.

SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Operational, but Data Flagging and Spiking Logger Voltage.

2017/07/14, DQPR-6185: Adam added that the head_temp2 is still occasionally flagging. The most recent DQPR status is "waiting - for spares."

TIPTWR --- GNDRAD general --- Operational.

TIPTWR --- MFR3m --- Operational.

TIPTWR --- PIRgnd --- Operational.

TIPTWR --- IRTgnd --- Operational.

TIPTWR --- PSPgnd --- Operational.

MAWS --- Automatic Weather Station --- Partly Operational.

2017/07/28, DQPR-6245: Dropouts started up again on 2017/07/20. The most recent DQPR status is "waiting - for spares."

2017/07/14, DQPR-6245: Adam asked if the cable was ever swapped out. The most recent DQPR status is "waiting - for spares."

2017/05/26, DQPR-6245: This issue looks like this was maybe resolved on 5/28, but we may want to leave the DQPR open longer to verify that data is being recorded and stored. Adam Theisen asked if the dropouts in the other variables are associated with this bad cable, or if they are due to a different issue. He posted a link to the Data Quality Explorer Metrics showing the data unavailability for that time period. The most recent DQPR status is "open - requires action."

MET --- METTOWER general --- Operational, but Potential Issue.

2017/07/14, DQPR-6265: Adam asked Jenni if she is ready to file a DQR about this issue. The most recent DQPR status is "open - requires action."

2017/06/16, DQPR-6265: Site Technicians found that the LED light on the HMT337 case was solid, so they replaced HMT337 (S/N: H2450111) with spare HMT337 (S/N: C3030027) per Jenni's instructions. When C3030027 was initially installed, it was reporting a temp malfunction and rh short circuit. Site ops confirmed the sensor chip was twisted inside the filter cap. The sensor was readjusted, and the errors were eliminated. Any missing data was caused by maintenance and troubleshooting. The most recent DQPR status is "open - requires action."

MET --- CMH --- Operational.

2017/07/28, DQPR-6385: The CMH dewpoint drops out and is roughly flatlined near 0 right before 04:00 UTC on 7/25. It exhibited abnormal spiking on 7/24 for ~9 hours as well. The most recent DQPR status is "open - requires action."

MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.

MET --- WIND INSTRUMENTS (SONIC) --- Operational.

MET --- PWD --- Operational.

MET --- AMC --- Operational.

2017/06/19, DQPR-6208: Ken will need to prepare and share data with the developer, and will ascertain the exact time ranges before submitting DQR (D170519.1). The most recent DQPR status is "in progress - assignments."

2017/05/13, DQPR-6208: Data after 20150822 for this site does follow the current DOD. The mentor will submit reformatted raw data for the period of 2014/09/14 to 2015/08/31 for the a1 level and b1 ingest so that the entire data record is based on the same DOD. Ken Reichl has been assigned DQR D170519.1. The most recent DQPR status is "in progress - assignments."

ECOR --- ECOR --- Operational.

ECOR --- SEBS --- Operational.

MW RADIOMETERS --- MWR3C --- Operational.

LIDAR --- MPL --- Operational.

2017/07/28, DQPR-6142: The latest data looks ok, so Paytsar Muradyan has been assigned a DQR assignment for missing data from 04/19 at 13:10 - 07/07 at 16:48. The most recent DQPR status is "in progress - assignments."

2017/05/12, DQPR-6142/CM-2017-AMF3-VSN-2023: The site received the replacement MPL (S/N 104) on 7/3. Technicians installed the instrument on 7/7/17, and data collection started at 22:20 UTC on 7/7. While the data collection for the instrument has been started, there is still an issue with connecting to the new computer sent with the instrument. Troubleshooting on this connectivity issue will resume on Monday 7/10/17. The most recent DQPR status is "waiting - for spares."

LIDAR --- Doppler LIDAR --- Operational.

LIDAR --- Raman LIDAR --- Not Operational.

2017/06/14, DQPR-5906: Todd Houchens and a laser tech were on-site from 6/10-11/2017 to repair the laser system, and to bring the system back up. Although the front-bench laser heads had been repaired, cracked fittings on the front bench (presumably freeze-related) prevented them from bringing up the front bench. Subsequently, it was discovered that the rear-bench heads had also been damaged, and will require repair. New fittings have been ordered for the front bench, and we are working on having the rear-bench heads repaired. The most recent DQPR status is "waiting - for spares."

LIDAR --- CEIL --- Operational.

RADAR --- RWP --- Operational.

RADAR --- KAZR --- Operational as per warno.arm.gov .

2017/06/20, DQPR-6216: Joseph Hardin says they are still waiting for a replacement part. The most recent DQPR status is "waiting - for spares."

2017/05/19, DQPR-6216: The OLI KAZR has increased spectrum width values, which was determined to be a failing PLO in the RG assembly. The mentor is planning to replace the PLO during the next site visit. The most recent DQPR status is "waiting - for spares."

RADAR --- KaWSACR --- Operational as per warno.arm.gov .

2017/07/07, Warno.arm.gov: Both Ka and W band radars have returned to operations after HVAC maintenance by radar technician Todd Houchens.

2017/06/20, DQPR-5979: During the site visit Joseph Hardin and others reinforced the waveguide. This should mitigate it some, but it is still a temporary fix. The most recent DQPR status is "in progress - assignments."

2017/01/27, DQPR-5704: An increased noise floor occurred twice on 2017/01/03. Prior to this occurrence, the last events were on 2016/12/29, when there was an increased noise floor three times.

2016/12/15, DQPR-5848: Starting on 2016/09/27 at 19:30 UTC, there looks to be an issue with how the ingest is setting the transition flag, and getting the sweeps for the HSRHI data. The number of sweeps in the HSRHI files start to shift between 1-3, when the shifting should not start until 4. Some examples of the azimuth and transition flags are posted in the DQPR.

2016/10/12, DQPR-5705: WSACR is sometimes showing some degraded/missing data. In the PPI (Plan Position Indicator) plots, there are missing data between 60-90 degrees. In the RHI (Range Height Indicator) plots, there are missing data throughout the scans. In the RHI, the background Zdr signal drops out, and the values in the echo region are high compared to bracketing scans.

Sonde --- BBSS --- Operational.

2017/07/28, CM-2017-AMF3-VSN-2044: A radiosonde launch failed and sonde parameters could not be set. Thus, launch 750728171 was terminated. The balloon launches will resume at 23:30 UTC.

2017/06/22, Biweekly Telecon: Hardware, software, and firmware were upgraded. The old sondes are being depleted.

IMG --- TSI --- Operational.

AOS --- General --- Partly Operational, Some Data Dropouts.

2017/07/28, DQPR-5858: Unless there are objections from Cindy or the PRB, Joshua King proposes that we abandon this DQPR. The most recent DQPR status is "in progress - assignments."

2017/06/23, DQPR-5858: Richard Wagener asked if anyone has looked at the VM's clock. Could it be that the time lags behind, and then jumps (resyncs), creating gaps in the time record? Richard suggests adding an assignment to Brent to look into possible system level causes for this behavior. The most recent DQPR status is "in progress - assignments."

AOS --- aosmet --- Operational, but Potential Precipitation Measurement Issue.

2017/07/28, DQPR-6386: The AOSMET had been consistently reporting similar precipitation as the MET PWD until 7/27 and 7/28, when the AOSMET began to flatline. During this time, however, the PWD continues to record precipitation. The most recent DQPR status is "open - requires action."

AOS --- CO --- Partly Operational, Internal Pump Malfunctioning.

2017/07/28, The pump and rebuild kit have been specified by the mentor and ordered through Los Gatos by Debbie Busch of ANL. When the pump arrives, please replace the failed pump and restart the instrument. At the operator's leisure, the failed pump can be rebuilt with a spares kit, OR operators can return the failed pump and spares kit to BNL for the mentor to rebuild. The most recent DQPR status is "waiting - for spares."

2017/07/20, DQPR-6364: Operator confirmed that the pump is running, but no air movement was observed. They will (try) to disconnect tubes at pump to confirm. The diaphragm is probably shot. The mentor contacted the vendor for the pump replacement and/or rebuild kit.

2017/07/19, DQPR-6364: An operator alerted the mentor that the pump pressure was out of range. The auto calibration was disconnected by LBL, so the mentor didn't immediately notice the problem. The dates of affected data will be determined as we proceed. The pump pressure reading 155 (which is railing the sensor). It should be ~

85.2 +/- 0.1. Stephen Springston suspects that the internal pump may have a problem. He tried rebooting the instrument, which has fixed the problem at ENA. This didn't work, so Stephen sent the operators an e-mail instructing them to disconnect the line between the instrument and filter, and then put a gloved (nitrile or latex) finger over the inlet to see if it is pulling a vacuum. Also, the internal pump should be audible from the back of the instrument. If the pump still doesn't work, the instrument will have to be pulled and opened on a bench to see if the pump starts. The pump is a small diaphragm pump inside the instrument. There could be a rotating piston visible. The pump pressure looks to have increased markedly to around 155 torr beginning at 08:00 UTC on 06/16. A picture of the DQO plot is posted on the DQPR. The most recent DQPR status is "open - requires action."

AOS --- CPC --- Operational.

AOS --- CAPS --- Operational, but Ingests Not On.

2017/07/27, DQPR-5816: From the raw data record, it looks like the CAPS was back in service on 2017/06/26. Joshua King asked Ken Burk if the ingests can be turned back on. Arthur Sedlacek has an assignment to write a DQR. The most recent DQPR status is "in progress - assignments."

2017/05/08, DQPR-5816: The OLI CAPS is at BNL, where one of the sample pumps was replaced, the 3- DAQ cards were mounted with screws, and optics were cleaned. The system is currently undergoing a performance test, and as part of this check, some irregularities (signal fluctuations) were observed. The mentor is in contact with the manufacturer. Once the signal fluctuations are resolved, a PSL calibration will be performed prior to shipment back to OLI. This PSL calibration is necessary due to a firmware issue. While Aerodyne is testing a new card that corrects the issue, it is not yet ready for prime time. The most recent DQPR status is "in progress - assignments."

AOS --- ACSM-- Not Operational, Instrument at AMF3.

2017/07/28, DQPR-6123: The reinstallation was started, but stopped after the decision was made to close the site, and we examined the need to align, tune, and calibrate the instrument. Right now the instrument is not operating. The most recent DQPR status is "waiting - for spares."

AOS --- GHG-Picarro --- Operational.

AOS --- HTDMA --- Operational.

2017/07/27, DQPR-6202: When Janek cleans the SEMS inlet lines, the pressure drops in the system, and this seems to have fixed the issue. The HT-DMA has been running for 5 days now without issues. The most recent DQPR status is "in progress - assignments."

2017/07/22, CM-2017-AMF3-VSN-2038: The MCPC located within the instrument was failing to show counts. Site ops shut down the instrument's software so that the flow measuring 'LFE' element inside the SEMS could be checked and cleaned. Site ops removed the LFE and cleaned with acetone. After drying the LFE, site ops installed it back into the SEMS and reconnected the cabling leading to the instrument. Power to the HTDMA was restored at 23:58 UTC.

2017/06/29, DQPR-6202: The manufacturer thinks we are still seeing issues from the previous event when water was accidentally poured into the instrument. He will try flushing the butanol valve to clean it.

AOS --- UHSAS --- Operational.

AOS --- NEPH --- Operational.

AOS --- IMPACTOR --- Operational.

AOS --- Ozone --- Operational.

AOS --- TRACEGAS --- Operational.

AOS --- PSAP --- Operational.

AOS --- IMPACTOR --- Operational.

AOS --- CCN --- Operational.

Precip --- MASC --- Operational.

Precip --- PIP --- Operational, Working on Beginning Data Ingest to DMF Archives.

Precip --- LPM --- Operational, Working on Beginning Data Ingest to DMF Archives.

Precip --- GEONOR --- Operational, Working on Beginning Data Ingest to DMF Archives.

Precip --- SRS --- Operational.

Other --- AERI --- Operational.

Other --- CIMEL --- Operational.

Other --- DataHawk Unmanned Aerial System --- Operational, not a full time instrument.

Other --- TBS --- Operational. Sensor will not be running full time.

Barrow

INFORMAL NSA INSTRUMENT STATUS REPORT FOR July 21 - July 28, 2017

BRIEF STATUS OF INSTRUMENTS IN BARROW (C1) AS OF 2017/07/28:

Facilities	Operational
Data Systems	Operational
Vehicles	Operational
Desktop Computers	Operational
SKYRAD - SKY Radiometer on Stand for Downwelling	Operational
MFRSR - Multifilter Rotating Shadowband Radiometer	Operational
NIMFR - Normal Incidence Multifilter Radiometer	Operational
GNDRAD - Ground Radiometer on Stand for Upwelling	Operational
MFR10m - Multifilter Radiometer at 10m height	Operational
MET - Surface & Tower Meteorological Instruments	Operational
AMC - Soil, up/downwelling radiation measurements	Operational
ECOR-twr - Eddy Correlation Flux System	Operational
ECOR-PtBRW - Eddy Correlation Flux System	Not Operational
MWR - Microwave Radiometer	Operational
MWRP - Microwave Radiometer Profiler	Operational
MWRHF - Microwave Radiometer High Frequency	Operational
GVR - G-band Vapor Radiometer	Not Operational
HSRL - High Spectral Resolution Lidar	Not Operational
MPL - Micropulse Lidar	Operational
CEIL - Vaisala Ceilometer	Operational
DL - Doppler LIDAR	Operational
RWP - Radar Wind Profiler	Operational
KAZR - Ka ARM Zenith Radar	Operational as per warno.arm.gov
KaWSACR - Ka-Band Scanning ARM Cloud Radar	Not Operational as per warno.arm.gov
XSAPR - X-Band Scanning ARM Precipitation Radar	Not Operational as per warno.arm.gov
BBSS (Autosonde) - Balloon Borne Sounding System	Operational
AOS - Aerosol Observing System	Operational
CLAP - Continuous Light Absorption Photometer	Operational
CPC - Condensation Particle Counter	Operational
NEPH - Nephelometer	Operational
IMPACTOR - AOS Impactor	Operational
TOWERCAM - 40m tower camera	Operational
TSI - Total Sky Imager	Operational
AERI - Atmospheric Emitted Radiance Interferometer	Operational
CIMEL - Cimel Sunphotometer	Operational

LPM - Laser Precipitation Monitor	Operational
SR50A - Snow Depth Sensor	Operational
IOP - CAM	Operational

* Barrow Instruments in Detail: *

INFRASTRUCTURE --- Facilities --- Operational.

INFRASTRUCTURE --- Data Systems --- Operational.

INFRASTRUCTURE --- Vehicles --- Operational.

INFRASTRUCTURE --- Desktop Computers --- Operational.

SKYRAD --- SKYRAD General --- Operational.

SKYRAD --- IRT --- Operational.

2017/07/18, DQPR-6339: Data was not available from 07/06/2017 at 12:12 UTC to 07/11/2017 at 21:00 UTC. The instrument appears to be collecting at present, so Victor Morris has a DQR assignment (D170718.1). The most recent DQPR status is "in progress - assignments."

SKYRAD --- PIR 1 Shaded --- Operational.

SKYRAD --- PIR 2 Shaded --- Operational.

SKYRAD --- SOLAR Tracker --- Operational.

2017/07/28, CM-2017-NSA-VSN-4366: The target on the NIP needed adjustment. Walter corrected the set time, and fine-tuned the sighting. The azimuth was adjusted so that the zenith is dead on target.

SKYRAD --- B&W diffuse --- Operational.

SKYRAD --- NIP --- Operational, but some data from April are flagged.

2017/07/28, DQPR-6213: Walter went out and checked the NIP target; it was a bit off center, but was still within the circle. Per CM-2017-NSA-VSN-4366, Walter went out and corrected the set time, and fine-tuned the sighting. The azimuth was adjusted so that the zenith is dead on target.

2017/07/18, DQPR-6213: Mentor Mark Kutchenreiter asked to check for the tracker and NIP alignment, and if the time adjustment from 6/2/17 made a difference in alignments. Walter confirmed there was a minor time adjustment, but the B&W and PIRs were shaded, and the NIP was near the outer target zone within normal.

2017/06/30, DQPR-6213: The SKYRAD data were failing tests in the QC VAP that pointed to a tracker issue. This was not readily apparent in the data, but was flagging a fair amount (up through 6/24). Adam Theisen thinks that this may be a non-issue, but he wanted the mentor to verify. Please see the DQPR page for the exact flagged dates and times. Walter checked the tracker target and time, and noted an increase of 0.07. The most recent DQPR status is "open - requires action."

SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Operational, but Shading Problems.

2017/07/28, CM-2017-NSA-VSN-4368/DQPR-6354: The MFRSR has a repeated shading problem, so Walter removed the head, checked the band shape, re-installed and leveled the head. He attempted the banding adjustment in marginal sun light conditions at solar noon.

2017/07/28, DQPR-6354: Adam Theisen posted a plot showing the shading from 2017/07/27. The most recent DQPR status is "open - requires action."

2017/07/21, DQPR-6297/6354: Christian Herrera asked to check the shading band position. Walter is awaiting a sunny day to perform the check.

2017/07/14, DQPR-6354: A new shading issue has started up between 16-22:00 UTC. The most recent DQPR status is "open - requires action."

2017/07/07, DQPR-6297: Christian Herrera has an assignment to write DQR D170707.3. Christian thinks that he narrowed the start date to 3/18 when the MFRSR first started showing a definite signal in the FFT. It increased in intensity over time, but became more intense on 5/28. The most recent DQPR status is "in progress - assignments."

SKYRAD --- NIMFR --- Operational.

TIPTWR --- GNDRAD general --- Operational.

TIPTWR --- MFR10m --- Operational.

TIPTWR --- PIRgnd --- Operational.

TIPTWR --- IRTgnd --- Operational.

TIPTWR --- PSPgnd --- Operational.

MET --- METTOWER general --- Operational.

MET --- CMH --- Operational.

MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.

MET --- WIND INSTRUMENTS (SONIC) --- Operational.

MET --- PWD --- Operational.

2017/07/21, CM-2017-NSA-VSN-4363: The PWD was returned from repair, Walter installed the instrument and Jenni checked the configuration and the PWD returned to service (07/21/2017, 17:50 UTC).

MET --- AMC --- Operational.

2017/06/19, DQPR-6207: Raw data needs to be prepared and shared with the developer. Over the years, some sensor cables have been switched around with inputs to the logger. The most recent DQPR status is "in progress - assignments."

2016/10/10, DQPR-5694: Joshua King adds that vmc from sensor 4 was missing from 14:30 UTC 2016/07/12- 15:30 UTC 2016/09/25. Since returning 2016/09/25, vmc has been decreasing to below 0.3. He is asking mentors if they have thoughts on what is causing this behavior. An attached image can be found on the DQPR page. IM Ken Reichl responds that this is an issue outlined in DQPR-4793 for the analogous site, OLI. The instrument reports soil data as 9999999, or a non-numerical character (for data SGP) for soil systems. The AMC systems may report missing data during warm seasons for instruments that are not sufficiently calibrated. The OLI datastream has an open-ended DQR D151023.3. Ken asks if he should make one for the NSA data as well, and is the DQR system the best way to characterize this issue?

ECOR --- ECOR-twr --- Operational.

ECOR --- ECOR-Pt. Barrow --- Not Operational, End of Season.

MW RADIOMETERS --- MWR --- Operational.

2017/07/28, DQPR-6366: Maria Cadeddu has been assigned DQR D170728.4. The most recent DQPR status is "in progress - assignments."

2017/07/23, DQPR-6366: Data is missing from 15:14 UTC on 7/10/2017 to 14:55 UTC on 7/12/17. The most recent DQPR status is "open - requires action."

MW RADIOMETERS --- MWRP --- Operational.

MW RADIOMETERS --- MWRHF --- Operational (External Noise Interference).

2016/09/30, DQPR-4165: The 150 GHz channel was showing high noise levels probably because of an external source of interference. Adam inquires if there is a path forward to solve the interference issues? The current DQPR status is "in progress- assignments", and it is open-ended. DQRs D140610.1 and D160426.3 have been reviewed and accepted by the PRB.

MW RADIOMETERS --- GVR --- Not Operational. Instrument Shipped to Prosensing for Refurbishment.

2017/07/07, DQPR-6274: The contract with Prosensing has been approved, so the mentor requests that the GVR be packed and shipped there. The most recent DQPR status is "waiting - for spares."

LIDAR --- HSRL --- Not Operational (Laser Off, Only Reduced Data Mode Running).

2017/06/23, DQPR-6201: Adam checked the data on the DMF, and it appears that we are receiving raw (00-level) data, but it is not being processed any further. Adam thinks we will just need a missing data DQR when the HSRL is back online. The most recent DQPR status is "waiting - for spares."

2017/05/22, DQPR-6201: The HSRL laser stopped to work properly. While we await the laser repair, the system will operate in a reduced data mode (housekeeping only), with the laser off since May 10th due to a seed laser failure. The rep rate of data is much less as a result, and any processed form would be empty or invalid.

LIDAR --- MPL --- Operational, but Intermittent Down Periods.

2017/07/07, DQPR-6328: During the investigation into the MPLCMASK problem, it was determined that there are potential problems with the NSA C1 and AWR M1 polarizations. From Donna Flynn: The AWR.M1 instrument polarization is off. The values for the linear depolarization ratio are too high. If you compare the water clouds at both AWR.S1 (reasonable values) and AWR.M1(high) on 20151210, this is evident. Additionally, the NSA.C1 data looks suspicious. I have only looked at a few days, but I have found poor agreement with HSRL and clear sky profiles when compared to Rayleigh, which suggests either an overly strong afterpulse or a collimation problem. The most recent DQPR status is "open - requires action."

LIDAR --- CEIL --- Operational, but a Warning is Still Flagged at 100%.

2017/07/13, DQPR-6153: The blower (SN K0810010) that apparently failed on 3/19 was tested at SGP with the following findings: Craig tested the blowers (SNs K0810010 and F0910001 [from AWR/M1]), and both of them seem to be working. The fans definitely work and they are also putting out heat; however, it's not much. According to the manual, they are only 175W heaters. The current draw was 1.6A. Victor Morris supplied this information on the open Vaisala support ticket, and they recommend returning the CL31 for repair. The most recent DQPR status is "waiting - for spares."

LIDAR --- Doppler LIDAR --- Operational.

2017/07/26, CM-2017-NSA-VSN-4364: Tim Grove requested that the computer be rebooted for software patches.

RADAR --- RWP --- Operational.

RADAR --- KAZR --- Operational as per warno.arm.gov.

2017/06/12, warno.arm.gov: The RDS1 power supply was replaced and the signal processor is operational. The system will be taken out for maintenance for a short time to replace a fan.

RADAR --- KaWSACR --- Data Transfer Problem, Not Operational as per warno.arm.gov.

2016/03/12, DQPR-4041: After much coordination with the pedestal manufacturer and while working with the instrument mentors, the azimuth DSA was re-programmed. Once a reprogrammed Azimuth DSA was installed and verified the Elevation DSA was also found to be faulty. It was replaced with another unit and the system now accepts azimuth and elevation commands. The most recent DQPR status is "waiting- for spares."

RADAR --- XSAPR --- Not Operational as per warno.arm.gov.

2017/02/16, BiWeekly Telecon: Andrei is looking at parts replacement/repairs/upgrade for June.

2016/08/04, DQPR-4841: The elevation servo amplifier failed, the radar can not scan in elevation. The radar will be upgraded sometime, and will be turned off until then. A DQR was submitted and reviewed by PRB. The DQPR status is "in progress" due to it being open-ended. Adam Theisen's DQR D160719.1 has been reviewed and accepted by the PRB.

Sonde --- BBSS (Autosonde) --- Operational.

2017/07/26, CM-2017-NSA-VSN-4365: Tim Grove requested a reboot of the computer for software patches.

AOS --- General --- Operational.

AOS --- AETH --- Operational.

AOS --- CLAP --- Operational.

2017/07/06, DQPR-6251: Per comments in connected DQPR 6252, offline discussion is ongoing with Annette and Anne offline on how best to proceed.

2017/05/31, DQPR-6251: This DQPR is being submitted as a placeholder for 2 periods of missing data identified through data review EWO 21024: 1. DQR D160927.8 covers a CLAP power supply failure from 08/25 - 09/19/2016, but we don't have ingested data again until 05:00 UTC 10/24/2016. We need another DQR for the 09/19 - 10/24/2016 time period. 2. Another missing data gap from 00:00 UTC 12/01 - 18:00 UTC 12/06/2016. Joshua King omitted start/end dates from DQPR so that DQRs can easily be assigned/filled out for these periods. The most recent DQPR status is "in progress - assignments."

AOS --- CPC --- Operational.

2017/06/30, DQPR-6252: Joshua King has reviewed the reprocessed data from Annette and Anne, and he is coordinating with them offline to determine a path forward. The most recent DQPR status is "in progress - assignments."

AOS --- NEPH --- Operational.

AOS --- IMPACTOR --- Operational.

IMG --- TOWERCAM --- Operational.

2017/07/28, CM-2017-NSA-VSN-4367: The camera lens needed cleaning, and UAF needed to check the mounting style in preparation for replacement of the camera. The tower was lowered, and the outer and inner camera lenses were removed, cleaned, and re-installed. The camera boom was raised again.

IMG --- TSI --- Operational.

Other --- AERI --- Operational.

Other --- CIMEL --- Operational.

Other --- LPM --- Operational, Logger Program Being Worked On.

Other --- SR50A --- Operational.

IOP --- CAM --- Operational.

5 North Slope Facilities

AMF3

Current and Upcoming Site Visits

Fred Helsel, Bruce Edwardson-SNL	July 6-13	Site overview, Sprung Structure
Todd Houchens/SNL	July 6-11	Radar repair, Sprung Structure
Bryan Hopkins/Rader Awning	July 6-10	Repair to Sprung Structure
Fred Helsel, SNL Management	August 8	Site tour
SNL, PNNL Teams	August 1-15	TBS/UAS operations
Fred Helsel, Bruce Edwardson/SNL	August 15-22	Site overview, RWP pack up

Current and Upcoming IOPs

Black Carbon on the North Slope (Baylor)

Comparison MASC (upcoming)

Site News/Issues

Unmet Needs

We are running on leased diesel generators while other options are investigated and evaluated.

Site Upgrades



Sprung structure repaired

Tripod and power installed in preparation for MASC Comparison IOP.

Site Safety

NA

Site Staffing Issues

Wessley King accepted a position with the FAA; he will be greatly missed and we wish him the best of luck.

Tethered Balloon Operations

TBS Report for July 2017

The DTS unit has returned from warranty maintenance in the UK and been tested. It will be used on the TBS in August.

Initial discussions with the fiber optic rotary joint manufacturer indicated that the supposed cause of DTS measurements failing through the rotary joint was a buildup of the fluid within the joint on the internal optics. The joints were returned to be swapped for different models at no charge. Upon inspection at the manufacturer, it was recommended that the fluid be changed, rather than trying a different joint model. The fluid was changed and an initial test of DTS measurements through a returned joint in a lab in Albuquerque were successful. Measurements will be attempted through the returned joint with the TBS in Oliktok in August.

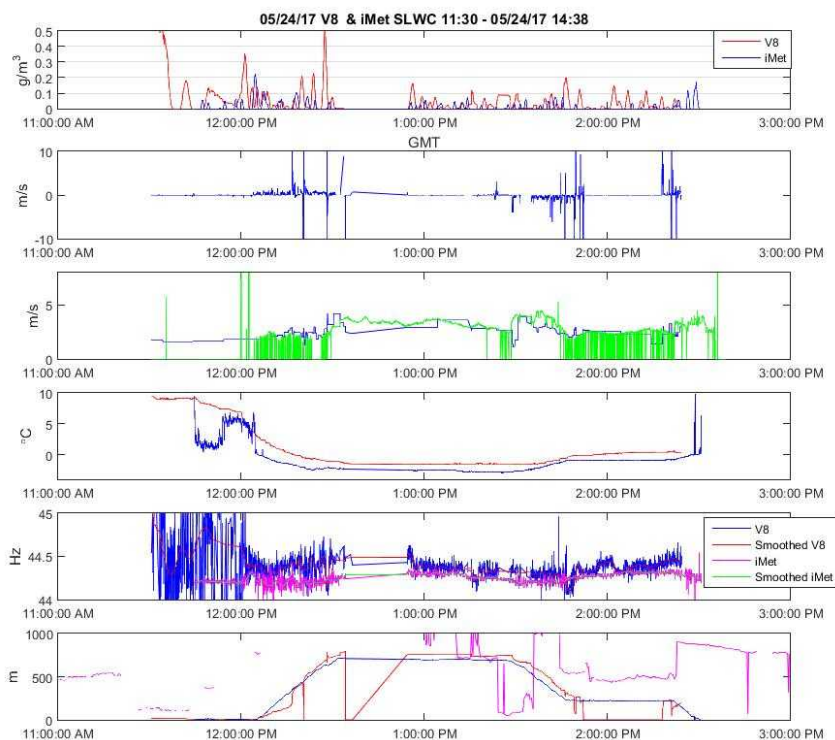
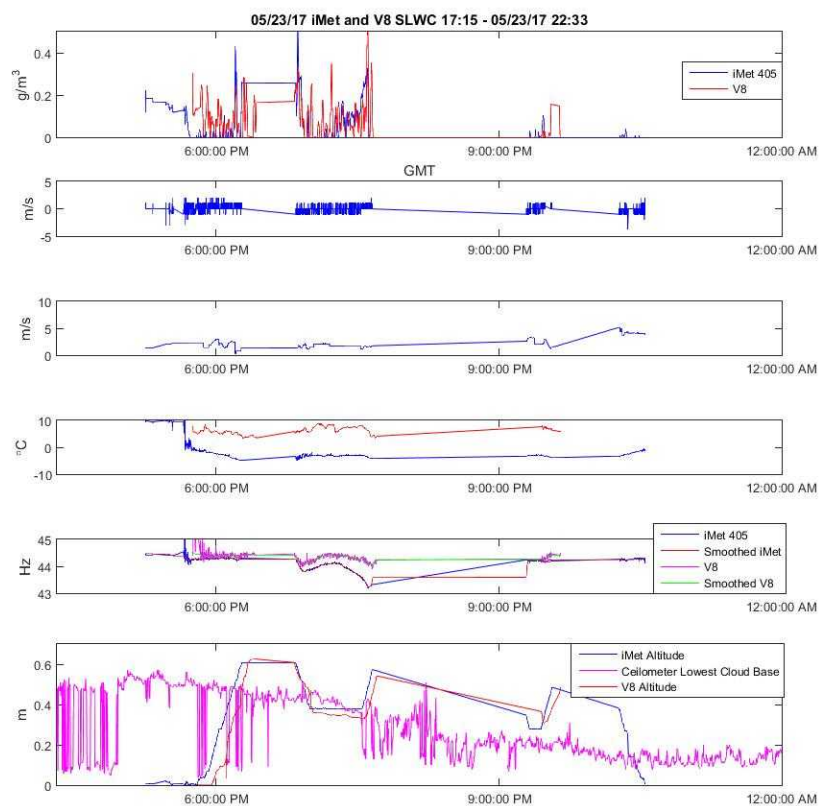
Collections of TBS iMet radiosonde files have been completed under EWO0021225.

Quick looks of supercooled liquid water content sondes have been completed under EWO0020925.

Despite testing three different antenna solutions communications between the TBS on the AMF3 runway and the desktop computer in the TBS shelter have been impossible so far. ANL procured a fourth antenna setup and it has arrived in Oliktok and will be tested in August.

A draft of the TBS Instrument Handbook was submitted and returned with changes, which are in progress.

May 2017 TBS supercooled liquid water content sonde data has been processed, two samples are shown below.



Barrow

Current and Upcoming Site Visits

Dan Lucero/SNL, Tower Services	July 10-14	Tower maintenance
Todd Houchens/SNL	July 10-14	Radar service, towers
Hope Michelson, Ray Bambha/SNL	July 21-27	Methane/Carbon LDRD
Markus Bradke/GFZ, Telayna Gordon/UAF	July 25-30	GNSS
Samuel Kauffman/Source Support	July 30-31	Data system support
Donna Wixon & BLM crew	August 6-10	Site inspection
Dan Lucero, Mark Ivey, SNL Management	August 9	Site tour
CJ Backlund/SNL	August 9-10	ES&H visit
Matthew Sturm, Lily Cohen/UAF	August 9-11	Instrument maintenance
Claire Moffett/Baylor	August 14-25	Multi-faceted IOP

Current and Upcoming IOPs

SNPP/NPOESS Ground Truth Sonde Launch, Phase 5 – Started Oct 1, 2016
Carbon Aerosol/Methane Gas, - Task order under CPA 1260749 for labor – POP Ends – 2018
Multi-faceted Approach to Characterizing Potential Radiative Forcing on the NSA using Two Coastal Sites, Baylor – June 2016 – Sept 2017.
OYES-Electric Field Study, Texas A&M, started June 2017
Global Navigation Satellite System (GNSS) – started July 2017

Site Issues

Red Ranger still not operational, sent in for repair, need top half of engine rebuilt.

Removed point ECOR system and put in warm storage, end of July 2017.

Completed extensive service and maintenance on 40-meter tower, replaced elevator motors, cables, readjusted guy wires, and repaired motor controllers.

Unmet Needs

Need an insulated connex located by the auto-launcher to begin manual balloon launches there.

Site Upgrades

NA

Site Safety

NA

Site Staffing Issues

NA



Tower and battery controls removed from Pt. Barrow/ECOR



Site left pristine



Solar panels

Distribution

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